

Claims:

1. An active reflector (10) for use in indoor wireless data communication systems comprising receiving means (11) for receiving signals from a first mobile terminal (13) and transmitting means (12) for transmitting the received signals to a second mobile terminal (14) in an omni-directional way, so that a direct communication with high data rates between mobile terminals in an indoor environment is enabled, whereby the active reflector is adapted to be mounted above the mobile terminals in the indoor environment to ensure essentially a line of sight connection between the active reflector and each mobile terminal.
2. An active reflector according to claim 1, characterised in that said active reflector comprises means (15) between said receiving means and said transmitting means for processing received signals.
3. An active reflector according to claim 2, characterised in that the signal processing means comprises at least one gain block (20) between the receiving means and the transmitting means.
4. An active reflector according to claim 3, characterised in that the gain block comprises more than one sub-gain block (21), whereby at least one of the sub-gain blocks can be switched off.
5. An active reflector according to claim 2, characterised by signal filtering means (22) for filtering the received signals or the received and amplified signals.
6. An active reflector according to claim 1, characterised by one common antenna (31) connected to the receiving means and the transmitting means.

7. An active reflector according to claim 1, characterised by a first antenna (23) connected to the receiving means Rx, and a second antenna (24) connected to the transmitting means Tx.
8. An active reflector according to claim 7, characterised in that the first and the second antenna have a uniform coverage pattern (40).
9. An active reflector according to claim 7, characterised in that the first and the second antenna are circular polarised antennae with the same polarisation direction.
10. An active reflector according to claim 7, characterised in that the first and the second antenna are antennae with different types of linear polarisation.
11. An active reflector according to claim 2, characterised in that the means for signal processing comprises frequency translating means (60) for changing the received signal frequency to another frequency, and transmitting the signal at the changed frequency to the mobile terminals.
12. An active reflector according to claim 1, characterised by means (61) for communicating data with at least one further active reflector.
13. An active reflector according to claim 1, characterised in that the active reflector is adapted to be power supplied by a power outlet (17) for an indoor lamp.
14. An active reflector according to claim 1, characterised in that the active reflector is adapted to be integrated into a usual lamp (70).
15. A wireless data communication system for direct communication between mobile terminals in an indoor environment characterised by at least one active reflector (10) according to claim 1, and at least two mobile terminals (13, 14) with transceivers for direct wireless through the active reflector.

16. A wireless direct data communication system according to claim 15, characterised in that antennae are connected to the transceivers of mobile terminals (18).
17. A wireless direct data communication system according to claim 16, characterised in that the antennae of the transceivers of the mobile terminals are high gain antennae.
18. A wireless direct data communication system according to claim 15, characterised by at least one further active reflector.
19. A wireless direct data communication system according to claim 15, characterised by at least two active repeaters comprising antennae for communicating signals from and to a first active reflector to and from a second active reflector.